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Don't feel obligated, lest it be undesirable: the relationship between prohibitives and apprehensives in Papapana and beyond

Abstract: This paper analyses the preverbal morpheme *te,* used in both apprehensive 'precautioning' sentences and in one of two prohibitive constructions in Papapana (papa1265, Austronesian, Oceanic; Papua New Guinea). I aim to establish whether there is a diachronic relationship between the two functions of *te*, and in which direction, how and why semantic change may have occurred. This requires consideration of the synchronic differences between Papapana prohibitives, comparisons with apprehensive and prohibitive constructions in other Oceanic languages, and an investigation of other languages where apprehensive and prohibitive morphemes are formally similar/identical. I argue that the two functions of *te* are diachronically related, but not polysemous, and that the prohibitive meaning developed from the apprehensive meaning via insubordination. This supports Pakendorf, Brigitte & Ewa Schalley's proposed pathway of development from possibility to prohibition, via apprehension and warning. However, I argue that their pathway does not, as claimed, run counter to the proposed grammaticalisation path of deontic to epistemic modality, because prohibitives are arguably not deontic. This paper contributes to the growing body of research on apprehensives, demonstrates that the pathway from apprehension to prohibition is perhaps not as rare as Pakendorf and Schalley thought, and contributes to research on language change and modality.

Keywords: apprehensive; deontic; insubordination; Oceanic; Papapana; precautioning; prohibitive

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1 Introduction

Apprehensives express that a situation is possible, but judged to be undesirable. Apprehensives are widespread cross-linguistically but have, until recently, received little attention in typological and semantic literature. Lichtenberk (1995) delineated three functions of apprehensives: *apprehensional-epistemic*, *fear*, and *precautioning*. In the *precautioning* function, the apprehensive occurs in a complex sentence and encodes an "apprehension-causing" situation; such a clause is associated with a "precaution" main clause expressing preventative action which can be taken to avoid the undesirable situation. In some languages, apprehensives are formally similar/identical to prohibitives, constructions in which the speaker tries to make the addressee not do, or cease doing, something, yet this similarity has scarcely been addressed. In a typological sample of 163 languages, Pakendorf and Schalley (2007) found the use of apprehensive forms to express prohibitives rare, and propose that meanings of prohibition develop from meanings of possibility via apprehension and warning. Pakendorf and Schalley (2007) claim that this pathway runs counter to the development of deontic to epistemic modality proposed in the literature, since they consider possibility and prohibition to encode epistemic and deontic modality respectively.

This paper analyses the preverbal morpheme *te,* used in both precautioning sentences and prohibitive clauses in Papapana, a previously undocumented and under-described endangered Northwest Solomonic (Oceanic, Austronesian) language, spoken on Bougainville island, Papua New Guinea. There are two prohibitive constructions in Papapana: both involve verbal reduplication and optional use of irrealis =*i*, but the verb is preceded by *te* in one and by the negator *ae* in the other. In Papapana precautioning sentences, *te* co-occurs with =*i* in the apprehension-causing adverbial clause, while the precaution main clause is usually an imperative or prohibitive. This paper thus contributes to the growing body of research on precautioning sentences, paying particular attention to the syntactic status of the apprehension-causing clause, one of the main issues addressed in previous research. I then investigate whether there is a diachronic relationship between the two functions of *te* in Papapana and in which direction semantic change may have occurred: did a prohibitive morpheme gain an apprehensive meaning or did an apprehensive morpheme gain a prohibitive meaning? Since diachronic data for Papapana is lacking, this analysis involves consideration of the synchronic differences between prohibitives involving *te* and *ae,* and comparing apprehensive and prohibitive constructions in other Oceanic languages. It also involves consideration of the theoretical literature on language change to identify why and how this semantic change happened.

I build on Pakendorf and Schalley's (2007) research by not only showing that there is formal similarity between apprehensives and prohibitives in Papapana, but in other languages of the Pacific too (where the morphemes in question are often polysemous), and by exploring whether or not the Papapana data supports Pakendorf and Schalley's (2007) proposed pathway of development from apprehension to prohibition.

Papapana speakers are based in six villages along Bougainville's northeast coast and at the time of writing, there are 99 fluent speakers, representing 17% of the villages' population. Papapana is spoken in the village domain, and occasionally in the first few years of school. Most fluent Papapana speakers are in their 30s or older. Papapana is evidently endangered and this is due to shift to Tok Pisin (tokp1240, English-based pidgin/creole; Papua New Guinea), which has been caused by a number of factors including European colonisation in 1886 and displacement during the Bougainville Crisis (1989–1997) (see Smith 2016b). Prior to colonisation, Papapana speakers mostly had contact with speakers of Rotokas (roto1249, Papuan; Bougainville, Papua New Guinea) for trade and intermarriage, whereas nowadays contact is extensive and with speakers of various Northwest Solomonic (NWS), Oceanic, and Papuan languages.

The Papapana analysis is based on a corpus of data I collected as part of a documentation and description project, involving 12 months' fieldwork in the Papapana community (June 2011–March 2012 and March–May 2013), and on further elicitation data I collected during a three-week visit in April 2018. In total, I collected 51 h of audio-recorded lexical and grammatical elicitation sessions and 10.5 h of audio- and/or video-recorded 'text' sessions, which were generally observed communicative events (such as traditional narratives) but also included staged communicative events (such as speakers describing procedures). The analysis is exemplified as much as possible by spontaneously produced utterances from text recordings (indicated by *T* in the data reference), but elicited data have been used (indicated by *E*) when that was not possible or when they more clearly exemplify the analysis. The data references begin with the fieldwork trip number, then the session type *T* or *E*, and session number. All data, including annotations and metadata, from my documentation and description project are archived with The Endangered Language Archive (ELAR) (Smith 2015).[1]

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1 The collection can be accessed freely by any registered ELAR user from http://elar.soas.ac.uk/deposit/0313. The annotation files require further work to make the orthography and word boundaries in the transcriptions more consistent, and the translations more accurate. Examples in this article have been amended in these areas.

This paper first provides an overview of the areas of Papapana's grammar that are most relevant to the constructions analysed in this paper (Section 2). Section 3 explores apprehensives from a typological perspective, with a focus on Oceanic and NWS languages, and then analyses precautioning sentences in Papapana. Section 4 similarly examines prohibitives from a typological perspective, with a focus on Oceanic and NWS languages, before analysing prohibitive constructions in Papapana. Section 5 investigates non-Austronesian, Austronesian, and Oceanic languages where an apprehensive and prohibitive morpheme are formally similar/identical, exploring the relationship between these two meanings before considering the relationship between the use of *te* in apprehension-causing and prohibitive clauses in Papapana. Section 6 turns to Pakendorf and Schalley's (2007) proposed pathway of development and considers whether the Papapana data supports this pathway or not, and the motivations and mechanisms for this semantic change. Finally, an overall conclusion is presented in Section 7, where I argue that Pakendorf and Schalley's (2007) proposed pathway does not, as claimed, run counter to the proposed grammaticalisation path of deontic to epistemic modality, because prohibitives are arguably not deontic.

2 Papapana grammatical overview

This section provides an overview of the areas of Papapana's grammar that are most relevant to the constructions in this paper: its verbal morphology and clausal and sentential syntax, including adverbial clauses (Section 2.1); the tense, aspect and mood (TAM) system, including irrealis mood and reduplication (Section 2.2); and negation (Section 2.3). For more information, see Smith-Dennis (2020).

2.1 The verb complex, clauses and complex sentences

As per the Oceanic research tradition, the term *verb complex* (VC) is a descriptive device used to capture the fixed structural relationship between the verbal head and its accompanying modifiers. Tables 1 and 2 show Papapana's VC structure (tense, aspect, mood [TAM] and negative markers are in bold). Papapana is a nominative–accusative language, with core arguments indexed in the VC by obligatory subject proclitics, and object enclitics.

Clause order is variable and this is argued to be the result of Papuan contact (Smith 2016a). In intransitive clauses, verb-initial clause order is highly restricted,

Table 1: Verb complex structure: preverbal.

PREVERBAL										HEAD
SBJ=	EMPH	**PST. IPFV**	**OPT or COND**	**NEG or APPR**	**PST**	**REP**	Adverb	SEQ Directional	CAUS- or DETR- or COM or R/R	**VERB(S)**

Table 2: Verb complex structure: postverbal.

HEAD					POSTVERBAL					
VERB(S)	Geocentric Directional	Allative Directional	**COMPL**	Adverb	=TR or APPL	=OBJ	**=PSI**	Deictic Directional	**=IRR**

Transitive =*i* and applicative *i* only occur with singular objects and certain verbs.

while in transitive clauses, both subject–verb–object (SVO) and subject–object–verb (SOV) order are prevalent. There is a clause initial Topic position.

Verbs do not have to be marked for TAM, so finiteness is determined by the presence of subject-indexing proclitics. Adverbial clauses are either (i) non-finite and introduced by a subordinator (1), (ii) finite but the specific combination of mood markers, such as *awa* and *=i,* does not occur in independent clauses (2), or (iii) finite and introduced by a subordinator (3)–(4). Subordinators do not occur in independent clauses, and the subordinate clause they mark may precede (4) or follow (3) the main clause.

(1) *Reareana i=pei   nao=i **tena** **vono=ina**   **na=vanua.**[2]*
    far   3PL.SBJ=PST.IPFV go=IRR SUBR hunt=3PL.OBJ   SPEC[CLI]=people[3]
    'They used to go far away in order to hunt humans.'
    (1-T021)

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2 All orthographic symbols have their expected IPA values, except *ng* = /ŋ/, *r* = /ɾ/, *v* = /β/, and ' = /ʔ/. Data from other languages is presented in the orthography used by the respective authors.
3 In data from other languages, I mostly maintain the abbreviations used by the authors. However, I made some changes to be consistent across all data or to align with Leipzig glossing rules. As per Leipzig glossing conventions, a reduplicant and base are separated by ~, but like other authors, I have not followed the Leipzig practice of giving a semantically specific gloss for the reduplicant; instead it is glossed as *RD*. A list of abbreviations is at the end of this paper.

(2) **O=to**   **awa**   **nao=i,**   *i=no*   *atun=i=o=i.*
     2SG.SBJ=EMPH   COND   go=IRR   3PL.SBJ=go.SEQ   attack=TR=2SG.OBJ=IRR
     'If you go, they will go and attack you.'
     (2-E022)

(3) *…i=vamamatau=ina=i*   *oina=bau*   child
     3PL.SBJ=teach=3PL.OBJ=IRR   3PL.PSSR=PL   child

     marana   **aina**   **i=to**   **nai=ina**   **nao**   **na:=bau**
     even.though   3PL   3PL.SBJ=EMPH   marry=3PL.OBJ   thither   some=PL

     i-ota.
     LOC-outside
     '…they should teach their children [Papapana], even though they married
     others from outside.'
     (1-T083)

(4) **Marana**   **i=to**   **vitu=a=i**   **ta=pei**   **tue**
     even.though   3PL.SBJ=EMPH   speak=3SG.OBJ=IRR   NSPEC[CLI]=part   language

     te=na=tue-ni   **sikuna,**
     OBL=SPEC[CLI]=language-CONST   ship

     mi=vamamatau   *manene=ina=ami.*
     1EXCL.SBJ=teach   return=3PL.OBJ=1EXCL.IPFV
     'Even though they say some words in Tok Pisin (lit. ship/foreign language),
     we teach them back [in Papapana].'
     (1-T083)

2.2 Tense, aspect and mood (TAM)

Papapana's complex TAM system involves preverbal and/or postverbal markers
and/or verbal reduplication. Most NWS languages display postverbal subject-
indexing (PSI), which reflects former possessor indexing and has varying functions
synchronically (see Palmer 2011: 722–723). In Papapana, PSI enclitics have a few
functions but primarily express imperfective aspect.

   A verb unmarked by TAM operators has past time reference, unless there are non-
past temporal adjuncts. Tense is absolute, with unmarked present but marked past
tense, and future time expressed by the irrealis mood enclitic. There are five aspectual
distinctions (habitual, continuous, proximative, repetitive and completive) and four
mood distinctions (hypothetical conditional, counterfactual conditional, optative and
apprehensive). Table 3 shows the relative positions in the VC of the TAM markers, and

Table 3: Papapana TAM constructions.

	Preverbal						VERB	Postverbal		
	PST.IPFV	**APPR**	**COND**	**OPT**	**PST**	**REP**	**Reduplication**	**COMPL**	**PSI enclitics**	**IRR**
	pei	*te*	*awa*	*eri*	*ara*	*vare~vae*		*osi*		*=i*
Past					✓					
Future										✓
Habitual (present)										✓
Habitual, past	✓									✓
Hypothetical conditional			✓							✓
Optative				✓						✓
Proximative				✓					✓	
Counterfactual conditional			✓	✓					✓	
Apprehensive		✓								✓
Imperfective (present)						✓			✓	
Repetitive							✓			
Completive								✓		

how they combine with each other and/or verbal reduplication, or how they function alone, to express the aforementioned distinctions.

2.2.1 Irrealis mood enclitic =*i*

Like Proto-Oceanic (POc) (see Lynch, Ross, and Crowley 2002: 84), realis mood is not morphologically marked in Papapana. Irrealis mood, which marks an event as unreal, is marked in Papapana by the postverbal enclitic =*i*.

   When irrealis =*i* is the only TAM marker, it can be used to refer to habitual events with a present time reference (5) or future events (6). Irrealis =*i* also marks events that the speaker is hypothesising will happen (7) but without any judgement about desirability, whereas in conjunction with *te* in apprehension-causing clauses, the possible event is deemed undesirable (see Section 3.2).

(5)   *Mi=nao=**i***   *i-ava.*
       1EXCL.SBJ=go=IRR   LOC-sea
       'We (often) go to sea.'
       (1-T010)

(6)   …*tue-ni*   *Papapana*   *e=taosi=**i***   *mumurina.*
       language-ATTRIB   Papapana   3SG.SBJ=finish=IRR   future
       '…Papapana language will die out in the future.'
       (1-T083)

(7)   *Ben*   *bea*   *e=oto=**i***   *te=na=au*   *obutu.*
       Ben   maybe   3SG.SBJ=board=IRR   OBL=SPEC=CLII   canoe
       'Maybe Ben might/will board the canoe.'
       (2-E007-1)

Furthermore, =*i* can optionally be used in imperative (8) or hortative clauses, or the imperative/hortative clause carries no TAM marking whatsoever (9). Language consultants reported that not voicing =*i* was a shorter form of expression. Cross-linguistically, "imperative clauses are likely to be irrealis, since they do not assert that X did happen" but a lack of TAM markers is also typical (Payne 1997: 247, 305). Note that since Papapana does not have inflectional morphology dedicated exclusively to imperatives and hortatives, and irrealis =*i* is optional, *imperative* and *hortative* refer here to a clause type, not a mood distinction.

(8)   *Nu=risi*   *nu=kaka'i*   *o=de=a=**i.***
       SPEC.CLII=rope   SPEC.CLII=small   2SG.SBJ=take=3SG.OBJ=IRR
       'Take a small rope.'
       (1-T035)

(9) *Mu=nao,   mu=no   ituvu=au   mai   nu=daramu.*
     2PL.SBJ=go 2PL.SBJ=go.SEQ fetch=1SG.OBJ hither SPEC.CLII=water
     'Go, go and fetch me some water.'
     (1-T007)

Irrealis =*i* is also optionally used in conjunction with other verbal morphology in prohibitives (see Section 4.2) and obligatorily with past imperfective marker *pei* to express past tense and habitual aspect, and with the optative mood marker *eri* and PSI enclitics to express optative mood. In complex sentences, =*i* operates with the conditional mood marker *awa* in hypothetical conditional adverbial clauses (see (2) in Section 2.1), and with apprehensive *te* in apprehension-causing adverbial clauses (see Section 3.2).

2.2.2 Reduplication

Reduplication in Papapana always involves continuous leftward copying. Reduplicants may be monosyllabic or disyllabic, and have either derivational or inflectional functions. Inflectional reduplication occurs in the VC with the reciprocal marker *vei* in reciprocal constructions, and with PSI enclitics to express habitual or continuous aspect. Papapana is typologically unusual, however, as some verbs also display the cross-linguistically rare phenomenon of multiple reduplication to express habitual aspect (Smith 2016c). Reduplication also occurs with preverbal negative *ae* or apprehensive *te* to negate imperatives (see Section 4.2).

2.3 Negation

Within the VC, negation of verbal declarative predicates (including stative predicates) is expressed by the preverbal negative marker *ae* (10)–(11), in both independent and subordinate clauses. Negative *ae* is also used to negate adjectives in adjective phrases. Imperatives are negated with reduplication and either negative *ae* or the preverbal apprehensive mood marker *te* (and are optionally marked by irrealis =*i*) (see Section 4.2). Although negated clauses are often treated as irrealis in languages that make a realis-irrealis contrast (Palmer 2001: 173–76), this is not the case in Papapana; instead mood and negation are independent and negative *ae* may occur in both realis (10) and irrealis (11) clauses.

(10) *Nathan   e=**ae**   ara   tavotu   egoego.*
      Nathan   3SG.SBJ=NEG   PST   arrive   well
      'Nathan didn't turn out well.'
      (1-T104)

(11) *I=**ae***   *nongono=**i.***
      3PL.SBJ=NEG   hear=IRR
      'They don't listen.'
      (1-T025)

3 *Lest it be undesirable*: apprehensive clauses

This section examines apprehensive morphemes from a typological perspective, with a focus on Oceanic and NWS languages (Section 3.1), before analysing precautioning sentences in Papapana (Section 3.2) including the syntactic status of the apprehension-causing clause (Section 3.3).

3.1 Apprehensives

Apprehensives convey that a situation is possible, but judged undesirable; thus, there is apprehension about the potential event. Since Dixon (1977: 349–56) first coined the term *apprehensional constructions,* various definitions have been proposed. Lichtenberk (1995: 295) defines apprehensives as encoding "an apprehension – typically on the part of the speaker – that a potential (undesirable) situation may turn out to be so", while Angelo and Schultze-Berndt (2016: 258) add that the state of affairs is "best avoided". Lichtenberk (1995: 291) describes *apprehensional-epistemic modality* as a "mixed modality" which is both epistemic and attitudinal, as it concerns "the speaker's degree of certainty about the factual status of the proposition" and their "attitude concerning the desirability of the situation".

Apprehensives have received little attention in typological and semantic literature on modality and clause linkage, despite being widespread cross-linguistically (Angelo and Schultze-Berndt 2016: 258). Vuillermet (2018: 258) suggests that one possible factor why such morphemes have been overlooked is the varied terminology: Vuillermet identifies twenty different terms including *admonitive, evitative, monitory, negative purpose clauses,* and *timitive mood.* Some accounts of apprehensive morphemes appear in grammatical descriptions of particular languages, including Australian languages such as Kayardild (kaya1319, Pama-Nyungan; Australia) (Evans 1995: 264–65), Amazonian languages such as Tariana (tari1256, Arawakan; Amazonia) (Aikhenvald 2003: 385–86), and Papuan and Austronesian languages (see below and Section 5). Other contributions to research on apprehensives include cross-linguistic studies (e.g. Dixon 2009: 23–25;

Schmidtke-Bode 2009: 129–44; Verstraete 2005). Published research papers focusing specifically on apprehensive morphemes include Lichtenberk's (1995) seminal paper and, more recently, research on apprehensives in Kriol (krio1252, English-based creole; Australia) (Angelo and Schultze-Berndt 2016) and Ese Ejja (esee1248, Tacanan; Amazonia) (Vuillermet 2018).

Lichtenberk (1995) considers the 'lest' morpheme, the complementizer *ada*, in To'aba'ita (toab1237, Austronesian, Oceanic; Solomon Islands), and 'lest' morphemes in other languages – two Fijian varieties (fiji1243, Austronesian, Oceanic; Fiji), Hua (yaga1260, Trans-New Guinea; Papua New Guinea), Diyari (dier1241, Pama-Nyungan; Australia), Martuthunira (mart1255, Pama-Nyungan; Australia), and the Indo-European languages, Czech (czec1258), Classical Greek (anci1242), and Old English (olde1238) and Modern English (stan1293). Based on these languages, Lichtenberk delineates three functions of apprehensive markers: *apprehensional-epistemic*, *fear*, and *precautioning*. In the *apprehensional-epistemic* function, the apprehensive clause functions as an independent clause, expressing both possibility and apprehension, while in the *fear* function, the apprehensive clause is "embedded under a verb of fearing" (Lichtenberk 1995: 296). In the *precautioning* function, the apprehensive morpheme occurs in a complex sentence and encodes an "apprehension-causing" situation; such a clause is associated with a "precaution" (Lichtenberk 1995) main clause expressing preventative action which can be taken to avoid the undesirable situation. Like apprehensives in general, apprehensives with a precautioning function are not rare, as demonstrated by Schmidtke-Bode's (2009: 129–44) sample of eighty languages, of which nineteen (23.8%) have apprehensive morphemes with a precautioning function, be it conjunctions, adverbial suffixes, postpositions, TAM markers, particles, or auxiliaries.

Lichtenberk (1995: 298) identifies two subtypes of apprehension-causing clauses: the avertive function and the 'in case' function.[4] In those clauses with an avertive function, the precaution can avert the apprehension-causing event (X so that not Y), or if no precaution is taken, the apprehension-causing situation will occur (if not X, then Y). In those clauses with an 'in case' function, the precaution can only avert the consequences of the apprehension-causing event, not the event itself (X in case Y). In some languages, such as Martuthunira, there is a formal distinction between avertive and 'in case' clauses (see Dench 1988: 385–86), whereas in other languages, like To'aba'ita, there is not, and the interpretation depends on "extralinguistic pragmatic factors, specifically on the presence or absence of a causal link between the two situations" (Lichtenberk 1995: 299).

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4 Authors often describe apprehension-causing clauses as *negative purpose clauses* even though this term only covers the avertive function and not the 'in case' function.

In the Oceanic languages mentioned so far, the apprehensive morphemes belong to different syntactic categories: *ada* 'lest' in To'aba'ita is a complementizer (Lichtenberk 1995); *de/dē* in Standard/Bauan Fijian is a subordinate verb phrase "marker" (Schütz 1985: 426); and *dee* in Boumaa Fijian is a "relator" which links two clauses (Dixon 1988: 258). Of the forty-three languages described in the grammar sketches in Lynch, Ross and Crowley (2002) *The Oceanic Languages,* eight languages (18.6%) are reported to have an apprehensive morpheme, translated as 'lest'.[5] In seven of these, the morpheme is a subordinator: Puluwatese (pulu1242, Federated States of Micronesia) (Lynch 2002c: 813), Longgu (long1395, Solomon Islands) (Hill 2002: 560), Nadrogā (west2519, Fiji) (Geraghty 2002: 836, 42, 47), Niuafo'ou (niua1240, Tonga) (Early 2002: 864), Cèmuhî (cemu1238, New Caledonia) (Lynch 2002a: 793), Xârâcùù (xara1244, New Caledonia) (Lynch, Ross, and Crowley 2002: 775), and Iaai (iaai1238, New Caledonia) (Lynch 2002b: 791). The eighth apprehensive morpheme is described as a *preventative* TAM particle: *oa* 'lest' in North Marquesan (nort2845, French Polynesia) (Lynch and Ross 2002: 872). Similarly, in Mwotlap (motl1237, Vanuatu), *tiple* 'for fear that' is a mood (irrealis) marker (François 2003: 301–12).

Apprehensive morphemes are not mentioned in any of the five NWS language grammar sketches in Lynch, Ross and Crowley (2002): Taiof (taio1240, Bougainville, Papua New Guinea) (Ross 2002b), Banoni (piva1237, Bougainville, Papua New Guinea) (Lynch and Ross 2002), Sisiqa (sisi1250, Solomon Islands) (Ross 2002a), Kokota (koko1269, Solomon Islands) (Palmer 2002) and Roviana (rovi1238, Solomon Islands) (Corston-Oliver 2002). My review of the three published reference grammars, other (unpublished) grammar sketches and analyses, and two studies of ergativity revealed that apprehensives are not attested/reported in Kokota (Palmer 2009a), Roviana (Corston 1996), Mono-Alu (mono1273, Bougainville, Papua New Guinea) (Fagan 1986) and Nehan (neha1247, Bougainville, Papua New Guinea) (Glennon 2014; Todd 1978) but that four of these NWS languages do have apprehensive morphemes. In Ughele (ughe1237, Solomon Islands), the conjunction *leke* 'lest' is used in "negative purpose adverbial clauses" (Frostad 2012: 270), while in Teop (teop1238, Bougainville, Papua New Guinea), the TAM marker *mene* is used to express apprehensions and warnings and indicates that a situation should be avoided (Mosel and Thiesen 2007). *Mene* translates as 'might, lest, otherwise, or else' and can have an apprehensional-epistemic or precautioning function.

In Hoava (hoav1238, Austronesian, Oceanic; Solomon Islands), the pre-verb phrase "modal negative" *maki* "expresses the desire of the speaker that negative

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[5] I searched for all twenty terms listed in Vuillermet (2018) and variations thereof, as well as 'so that', 'in case' and 'fear'.

consequences of an event do not occur" (Davis 2003: 247) and may have a pre-cautioning function (12) or arguably an apprehensional-epistemic function (13). Although in (14) the subject is second person and the translation is 'don't' (and elsewhere *maki* is glossed as NEG.IMP), this is not a prohibitive: the speaker is not trying to make the addressee not do something (see Section 4.1), because the addressee is unlikely to intentionally hurt themselves. Instead, the speaker is warning the addressee of something (bad) that might happen.

Hoava

(12) *Taloa   tu   goe,   **maki**   vari-baha-e.*
      leave   REST   PRO:2SG   NEG:WARN   RECP-bewitch-TR:3PL
      'You should leave, lest we bewitch each other.'
      (Davis 2003: 255)

(13) ***Maki***   *loga~loga   ṉina.*
      NEG:WARN   RD~lie   possibly
      'It's not good if you are telling fibs.'
      (Davis 2003: 250)

(14) ***Maki***   *ta-ṉani   leboto.*
      NEG:WARN   PASS-bite   machete
      'Don't be hurt by the machete.'
      (Davis 2003: 247)

In Kubokota (ghan1242, Austronesian, Oceanic; Solomon Islands), the pre-clausal adverb *keta* is glossed as 'lest' and is "used to warn of negative consequences if an event should take place" (Chambers 2009: 147). *Keta* has a 'fear' function, an apprehensional-epistemic function (15) and a precautioning function (16), and the clause it marks is usually in the *prospective irrealis mood* (Chambers 2009: 147). In some examples, such as (15), the translation is 'not' or 'don't let him/her… ' and (15) even has a second person subject. However, like Hoava example (14), this is not a prohibitive.

Kubokota

(15) ***Keta***   *mu   lotu   ko   mu   paleka.*
      lest   2.IRR   fall   so   2.IRR   wound
      'Be careful not to fall and hurt yourself.'
      (Chambers 2009: 147)

(16) *Lao   teku=a,   **keta**   mi   iqolo   soga=i   maka!*
      go   take=3SG.OBJ   lest   3SG.IRR   wake   again=3SG.OBJ   one
      'Go and get [the crying child], so she doesn't wake up the other one!'
      (Chambers 2009: 89)

The research suggests that in Oceanic and NWS languages, apprehensive morphemes tend to be subordinators and have at least a precautioning function. As Section 3.2 shows, the apprehensive morpheme in Papapana has a precautioning function and is not a subordinator but a preverbal mood marker inside the VC.

3.2 Papapana apprehensives

In Papapana, the preverbal apprehensive mood marker *te* co-occurs with irrealis =*i*. *Te* occurs inside the VC in Papapana after subject-indexing proclitics but before the verb (see Tables 1 and 2) and is therefore not a subordinator, as subordinators are external to the VC; see (3)–(4) in Section 2.1. *Te* does not co-occur with any other TAM markers, nor with negative *ae,* nor is it attested with the emphatic marker *to,* therefore the subject proclitics always attach to *te.*

   In both elicitation and text data, apprehensive *te* and irrealis =*i* are used in the apprehension-causing adverbial clause of a precautioning sentence, while the precaution main clause may be imperative (17)–(18), hortative (19) or prohibitive (20). There is only one example in the corpus of a declarative main clause (21). The precaution clause in Papapana usually has a second person subject but can have a first or third person subject as in (19) and (21). The apprehension-causing clause can have a second person subject as in (17) or third person subject as in the remaining examples, but there are no examples in the corpus of a first person subject. Thus, unlike the results of Schmidtke-Bode's (2009: 133) typological study, there is no preference in Papapana for non-co-referential subjects.

(17)   *O=nabe=**i**,*   *o=**te***   *mate=**i**.*
      2SG.SBJ=swim=IRR   2SG.SBJ=APPR   die=IRR
      'Swim, (otherwise) you might die.'/ 'Swim, (so that) you don't die.'
      (2-E028-2)

(18)   *Ta*   *na=au*   dada   *o=noe*   *a'aisi,*   *e=**te***
      but   SPEC=CLII   coconut.milk   2SG.SBJ=put   many   3SG.SBJ=APPR

      *tuatuare=**i**.*
      burn=IRR
      'But put lots of coconut milk [on your hands], (otherwise) it will burn.'/
      'But put lots of coconut milk [on your hands], (so that) it doesn't burn.'
      (1-T036-8)

(19)   *"**Sa**=nao*   *tovoni*   *nao=**i**,*   *i=**te***   *moroko=ira=**i**."*
      1INCL.SBJ.HORT=go   check   thither=IRR   3PL.SBJ=APPR   lie=1INCL.OBJ=IRR
      '"Let's go check, (in case) they might be lying to us."'
      (1-T034)

(20)   *O=**ae**   **ago**~agos=i=a*   *pei*   *to'o~to'o,*   *e=**te***
        2SG.SBJ=NEG   RD~hold=TR-3SG.OBJ   part   RD~cut   3SG.SBJ=APPR
        *tepe=i=o=**i.***
        cut=TR=2SG.OBJ=IRR
        'Don't hold the knife, (otherwise) it might cut you.'/'Don't hold the knife,
        (so that) it doesn't cut you.'
        (2-E028)

(21)   *…e=va-mamago=a*   *pei*   *tanga*
        3SG.SBJ=CAUS-decorate=3SG.OBJ   part   hang

        tenava   *e=**te***   *uga*   *poto=**i**…*
        so.that   3SG.SBJ=APPR   drown   INTS=IRR
        '…she adorned him with the necklace, so that he didn't drown … '/'…she
        adorned him with the necklace, otherwise he might drown … '
        (1-T029)

The position of the two clauses is fixed: the main clause precedes the adverbial
clause. This is a common cross-linguistic tendency (Dixon 2009: 48) and is iconic
since the precaution clause has directive illocutionary force, aiming to prevent the
potential, undesirable event in the apprehension-causing clause from occurring.

    There is no formal distinction between avertive and 'in case' clauses in
Papapana, as demonstrated clearly in (22) and (23), and the interpretation depends
on the presence or absence of a causal link between the two situations. The
Papapana utterances presented above can generally be interpreted as avertive,
though (19) can only be interpreted as 'in case'. In (19), the speaker is recounting
when the army distributed papers announcing a ceasefire during the Bougainville
Crisis. The speaker, or his companion, uttered (19), suggesting that they check if
the army were lying. They could not prevent the army lying, but the precaution of
verifying the message could avert the consequences of the potential lie.

(22)   *Nu=ta~taguvu*   *o=de=a,*   *o=**te***   *u'usi=**i.***
        SPEC.CLII=RD~cover   2SG.OBJ=take=3SG.OBJ   2SG.SBJ=APPR   wet=IRR
        'Take the umbrella, (otherwise) you might get wet.'/'Take the umbrella,
        (so that) you don't get wet.'
        (3-E002)

(23)   *O=de=a*   *nu=ta~taguvu,*   *na=naoi*   *e=**te***
        2SG.OBJ=take=3SG.OBJ   SPEC.CLII=RD~cover   SPEC[CLI]=rain   3SG.SBJ=APPR
        *si'i=**i.***
        rain=IRR
        'Take the umbrella, (in case) it might rain.'
        (3-E002)

3.3 Papapana: the syntactic status of the apprehension-causing clause

One of the main issues in the existing literature on apprehensives is their syntactic and/or pragmatic status as dependent or independent clauses. In Papapana, the apprehension-causing clause is pragmatically dependent, since it justifies the precaution expressed in the main clause, as François (2003: 308) also argues for the 'Évitatif' *tiple* 'for fear that' in Mwotlap. I also consider the Papapana apprehension-causing clause to be syntactically dependent, for the following reasons. Firstly, apprehension-causing clauses meet criterion (ii) for defining adverbial clauses as subordinate (Section 2.1) because there is no strong evidence that apprehensive *te* together with irrealis *=i* can occur in independent apprehensive clauses (Section 3.3.1). A subordinator can also be employed (Section 3.3.2), in which case, apprehension-causing clauses additionally meet criteria (iii). Furthermore, in most examples of Papapana precautioning sentences, the speaker judges the event possible and undesirable, and directs the addressee to take a precaution to avoid this event. However, in (21) it is the female subject who judges the event to be possible and undesirable and it is she who takes a precaution. In Ese Ejja, this difference in perspective (speaker vs. subject) is "a key element to understanding how the Apprehensive [a main clause mood marker] and the Avertive [a subordinate clause marker] semantically relate to one another" (Vuillermet 2018: 280). Using this criterion would also identify Papapana apprehension-causing clauses as subordinate since the evaluator of the undesirability is the subject of the main clause (which may or may not be the speaker).

3.3.1 Apprehension-causing clause as a dependent clause

There is no strong evidence that the combination of apprehensive *te* and irrealis *=i* (with a non-reduplicated verb), occurs in independent clauses with an 'apprehensional-epistemic' function. The only examples where a clause marked by *te* and *=i* does occur independently come from one language consultant during elicitation sessions in April 2018 and only when (i) we'd discussed the complex sentence first such as in (24) which corresponds to (17), (ii) when I provided context such as a shocked facial expression or I'd uttered Tok Pisin *lukaut* 'look out' (25), or (iii) when I elicited with Tok Pisin *nogut* 'lest' (26).

(24)   *O=**te***   *mate=**i.***
      2SG.SBJ=APPR   die=IRR
      'You might die.'
      (3-E002)

(25)   *Na='oru*   *e=**te***   *ani=o=**i.***
       SPEC[CLI]=snake   3SG.SBJ=APPR   eat=2SG.OBJ=IRR
       'The snake might/will bite you.'
       (3-E002)

(26)   *U=**te***   *nao=**i***   *Buka*   *natui.*
       1SG.SBJ=APPR   go=IRR   Buka   tomorrow
       'Nogut bai mi go long Buka tumora [I might go to Buka tomorrow].'
       (3-E002)

The consultant was arguably biased in (26) by Tok Pisin, especially as when I elicited using English *might,* the utterance produced involved irrealis *=i* and *bea* 'maybe' as in (27) (and also in (7) in Section 2.2.1).

(27)   *Anau*   *bea*   *kaukau*   *u=ani=i*   *i-boni.*
       1SG   maybe   sweet.potato   1SG.SBJ=eat=IRR   LOC-night
       'I might eat sweet potatoes tonight.'
       (3-E002)

For the other instances of *te* and *=i* in isolated clauses, the consultant arguably had the precaution clause in mind, either because we'd discussed the complex sentence then I had asked about the acceptability of *te* and *=i* in an independent clause, or because I provided context. The apprehension-causing clause is thus arguably not independent because there is an implicit precaution clause. Indeed, François (2003: 310–11) also considers a few cases of isolated 'Évitatif' clauses in Mwotlap and argues that this independence is due to an implicit precaution. Sometimes in the Mwotlap examples, the precaution clause may be restored/ implied from the context; for example, the speaker might utter the vocative *ohoo!* 'no!' and then justify this refusal with an apprehension-causing clause. On other occasions, the semantic content of the precaution clause is inferable from the addressee's actions, which the speaker reacts to before uttering their apprehension. Similarly, in Diyari, subordinate 'lest' clauses, marked by the verbal suffix *-yaṭi*, are occasionally found "where there appears to be no main clause to which they are subordinated" (Austin 1981: 225), but "it is clear from the context that an 'understood' imperative, warning, or suggestion is implicit" and such clauses "may be regarded as structurally subordinate because it is always *possible* to add a main clause before them" (Austin 1981: 229, original emphasis). Evans (2007) however regards such clauses as insubordinated independent clauses (see Section 6.2.3).

Examples (24)–(27) are not considered strong evidence that *te* and *=i* (with a non-reduplicated verb) can occur in independent clauses because they arise from one day's elicitation with one consultant, who was arguably influenced by the discussion, context or elicitation language. More importantly, there is no supporting evidence from the text data of independent clauses being marked by *te* and *=i,* nor from any elicitation data collected between 2011 and 2013.

3.3.2 Use of a subordinator

In Papapana, the apprehension-causing clause is not usually introduced by a subordinator, however, the subordinator *tenava* 'so that' (as in (21) above) or the general subordinator *avosia* can be employed:

(28) *O=tavia   o'ogo=a=i,   **avosia** saviako te   ani o   na=gono,*
      2SG.SBJ=rub well=3SG.OBJ=IRR SUBR   tapioca OBL 2SG or SPEC[CLI]=banana

      *mata=au   o=to   atuma'as=i=a=i,   e=**te**   ravarava=**i***
      what=CLII   2SG.SBJ=EMPH   cook=TR=3SG.OBJ=IRR 3SG.SBJ=APPR   black=IRR

      o=to   eri   tatu=ina=mu=i.
      2SG.SBJ=EMPH   OPT   mash=3PL.OBJ=2SG.IPFV=IRR
      'You rub it well, so that your tapioca or the banana, whatever you cooked, won't be black when you want to mash them.'
      (1-T036-8)

The subordinators *tenava* 'so that' (29)–(30) and *avosia* (31) also introduce finite positive purposive adverbial clauses where the subjects of the adverbial and main clause are non-coreferential. These subordinators do not occur in independent clauses, and the subordinate clause may precede (29) or follow (30)–(31) the main clause.

(29) ***Tenava** na='usia   i=aputu=i,*
      so.that   SPEC[CLI]=child   3PL.SBJ=sleep=IRR

      iai   pei   ena   mama   i=atu=a=i.
      PROX   PART   sing   DEM1   3PL.SBJ=make=3SG.OBJ=IRR
      'So that the children will sleep, they sing this little song.'
      (1-T048)

(30)   *I=no*   *uvu=i*
        3PL.SBJ=go.SEQ   clear=IRR

        tenava   *e-sina-na*   *e=siod=i=a=i*
        so.that   PERS-mother-3SG.PSSR   3SG.SBJ=work=TR=3SG.OBJ=IRR

        na=uvu.
        SPEC[CLI]=clear
        'They cleared grass so that his mother could work the clearing.'
        (1-T027-2)

(31)   *Anau*   *u=vagasi=a*   *nu=kakau*
        1SG   1SG.SBJ=fasten=3SG.OBJ   SPEC.CLII=dog

        avosia   *e=ae*   *amu=ina=i*   *na=vanua.*
        SUBR   3SG.SBJ=NEG   bite=3PL.OBJ=IRR   SPEC[CLI]=people
        'I tied up the dog so that it won't bite people.'
        (2-E028-2)

4 *Don't feel obligated*: prohibitive clauses

This section describes prohibitives from a typological perspective, with a focus on Oceanic and NWS languages (Section 4.1), before analysing prohibitive constructions in Papapana (Section 4.2) including the difference between the use of negative *ae* and apprehensive *te* (Section 4.3).

4.1 Prohibitives

Prohibitives, also called *negative imperatives*, are constructions in which "the speaker tries to make the hearer not realize some state of affairs" (Devos and Van Olmen 2013: 22). Cross-linguistically, in a sample of 495 languages, van der Auwera and Lejeune (2013) identify four strategies for forming prohibitives: (i) a positive imperative verbal construction combined with the declarative negative strategy (23%); (ii) a positive imperative verbal construction combined with a negative strategy not found in declaratives (37%); (iii) a verbal construction other than the positive imperative, and the declarative negative strategy (11%); (iv) a verbal construction other than the positive imperative and a negative strategy not found in declaratives (29%).

In Oceanic languages, prohibitions "usually display a different form of negation from declaratives" (Lynch, Ross, and Crowley 2002: 52). Indeed, in a collaborative study of negation in Oceanic languages, Mosel (1999: 15) reports that, except the Loyalty Islands languages, "all the languages in our sample formally distinguish the negation of assertive and imperative clauses".[6] This aligns with van der Auwera and Lejeune's (2013) findings where 66% of the languages in their sample use a distinct negator in prohibitives. Nevertheless, out of 37 sketch grammars in Lynch, Ross and Crowley (2002) which describe prohibitives, 27% of languages use the same negator in both declaratives and imperatives. In terms of the verbal construction, 70% of the 37 languages use the same verbal construction as the imperative, while 25% use a different verbal construction. This again aligns with van der Auwera and Lejeune's (2013) findings where 60% of the languages in their sample use the same verbal construction as the imperative.

Among the NWS languages for which I could find descriptions of prohibitives, Nehan (Todd 1978), Hoava (Davis 2003), Kokota (Palmer 2002), Kubokota (Chambers 2009) and Ughele (Frostad 2012) all use the same negator in both declaratives and imperatives, while Banoni (Lynch and Ross 2002), Sisiqa (Ross 2002a) and Taiof (Ross 2002b) use distinct negators. Furthermore, Hoava, Kokota and Kubokota all use the same verbal construction as the imperative, while Banoni, Ughele and Sisiqa use a different verbal construction for the prohibitive. Among these eight languages, it is therefore more common to use the same negator, and the imperative verbal construction: the former does not align with van der Auwera and Lejeune's (2013) findings, whereas the latter does. As Section 4.2 shows, Papapana uses two of the four prohibitive strategies identified in van der Auwera and Lejeune (2013): (iii) the use of a distinct verbal construction and the declarative negative strategy and (iv) the use of a distinct verbal construction and a distinct negative strategy.

4.2 Papapana prohibitives

As Table 4 shows, Papapana prohibitives are formed with monosyllabic or disyllabic verbal reduplication, sometimes irrealis =*i,* and then either preverbal negative *ae* as in (32)–(33), which also negates verbal declarative predicates and adjectives (Section 2.3), or preverbal apprehensive *te* as in (34)–(35). I use the term

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6 This sample includes in-depth studies on negation in seven Oceanic languages from four different subfamilies, and a survey of negation in the New Caledonian and Loyalty Island languages.

prohibitive, rather than *negative imperative*, because these clauses are not simply negated imperative clauses, as positive imperative clauses do not have a reduplicated verb (compare (34) with *munao* 'go' in (9) in Section 2.2.1). As with imperative and hortative clauses (Section 2.2.1), irrealis =*i* may be present as in (32) and (34), or absent as in (33) and (35). Like imperative and hortative clauses, the absence of =*i* in prohibitives is considered to be ellipsis in casual speech.

Table 4: Papapana imperative and prohibitive constructions.

	APPR *te*	NEG *ae*	Verb reduplication	IRR =*i*
Imperative/Hortative				(✓)
Prohibitive 1		✓	✓	(✓)
Prohibitive 2	✓		✓	(✓)

(32)   *Mu=**ae**   **va**~vatan=i=a=**i.***
        2PL.SBJ=NEG   RD~tell=TR=3SG.OBJ=IRR
        'Don't tell him.'
        (1-T065)

(33)   *O=**ae**   **oto**~oto   te=na=au   obutu.*
        2SG.SBJ=NEG   RD~board   OBL=SPEC=CLII   canoe
        'Don't board the canoe.'
        (2-E026)

(34)   *"Mu=**te**   **nao**~nao=**i.**"*
        2PL.SBJ=APPR   RD~go=IRR
        '"Don't go."'
        (1-T053)

(35)   *"Mu=**te**   **atu**~atun=i=a   enai   au=sinoni!"*
        2PL.SBJ=APPR   RD~attack=TR=3SG.OBJ   DEM2   1SG.PSSR[CLI] =husband
        '"Don't attack my husband!"'
        (1-T101)

Verbal reduplication in prohibitives may be monosyllabic or disyllabic but it is unclear what motivates the type of reduplication (see Smith 2016c: 541). Papapana verbal reduplication principally expresses augmentation of events (continuous,

habitual, and reciprocal) (Smith 2016c), a typical semantic property expressed by reduplication cross-linguistically (Kajitani 2005); however, the use of verbal reduplication in prohibitives is more unusual and less iconic. Nevertheless, verbal reduplication in negative clauses is attested in NWS languages: it occurs in prohibitives in Banoni (Lynch and Ross 2002: 450), and in Torau verbal reduplication is obligatory when negation is expressed by the suffix -*ka* on the preverbal modal/subject-indexing particle (Palmer 2009b).

4.3 Papapana: negative *ae* versus apprehensive *te*

While verbal reduplication and optional use of irrealis =*i* are characteristic of all Papapana prohibitives, some prohibitive clauses employ preverbal negative *ae* (which also negates verbal declarative predicates and adjectives), while others utilise preverbal apprehensive *te*. The use of *ae* is two times more frequent than *te* in my text corpus.

During my 2011–2013 fieldwork, consultants could not account for the difference between *ae* and *te;* these markers were deemed interchangeable as shown in (36) and (37).

(36) a. *O=**ae**   **to**~tonu,   o=te   pu=i.*
        2SG.SBJ=NEG   RD~stand   2SG.SBJ=APPR   fall=IRR
        'Don't stand up, (otherwise/in case) you might fall.'
        (2-E028-2)

    b. *O=**te**   **to**~tonu,   o=te   pu=i.*
        2SG.SBJ=APPR   RD~stand   2SG.SBJ=APPR   fall=IRR
        'Don't stand up, (otherwise/in case) you might fall.'
        (2-E028-2)

(37) a. *O=**ae**   **ago**~agos=i=a   pei   to'o~to'o.*
        2SG.SBJ=NEG   RD~hold=TR=3SG.OBJ   PART   RD~cut
        'Don't hold the knife.'
        (2-E026)

    b. *O=**te**   **ago**~agos=i=a   pei   to'o~to'o.*
        2SG.SBJ=APPR   RD~hold=TR=3SG.OBJ   PART   RD~cut
        'Don't hold the knife.'
        (2-E026)

However, in 2018, one consultant[7] suggested that *ae* is used when prohibiting someone from doing something they have not done yet (38a), while *te* is used when prohibiting someone from doing something they have already commenced (38b). Similarly for (37a), the consultant said that the addressee is not holding the knife yet, while in (37b) they are already holding it.

(38) a. *O=**ae**   vae~vaene,   o=te   pu=i.*
          2SG.SBJ=NEG   RD~climb   2SG.SBJ=APPR   fall=IRR
          'Don't climb [that tree], (otherwise) you might fall.'
          (3-E001)

     b. *O=**te**   vae~vaene,   o=te   pu=i.*
          2SG.SBJ=APPR   RD~climb   2SG.SBJ=APPR   fall=IRR
          'Stop climbing [that tree], (otherwise) you might fall.'
          (3-E001)

The analysis of the difference between *ae* and *te* is supported by two traditional narratives. In (39) people are running with bows and clubs to attack a woman's 'bird husband' and she suddenly jumps down and exclaims (39). In (40) a frog meets a wallaby, who is crying because his friends have been killed. The wallaby says he is sad and the frog tells him not to be. In both narratives, the situation is already underway when the prohibition is given.

(39) *"Mu=**te**   atu~atun=i=a   enai   au=sinoni!"*
       2PL.SBJ=APPR   RD~attack=TR=3SG.OBJ   DEM2   1SG.PSSR[CLI]=husband
       '"Don't attack my husband!"'
       (1-T101)

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7 This consultant was no more proficient in Papapana than the consultants in elicitation sessions 2-E026 and 2-E028, nor was her proposed distinction age-related, since she was in her early forties in 2018, whereas the other consultants were in their sixties, or late thirties/ early forties. The consultant in 3-E001 and 3-E002 grew up speaking Papapana and Rotokas; however, language contact is unlikely as an influencing factor in her analysis since multilingualism is pervasive in the community, and in fact her Papapana-speaking mother was one of the consultants in 2-E028. Instead it is likely that the consultant in 3-E001 and 3-E002 was able to account for a difference between *ae* and *te* because she is attuned to the meanings of lexemes and grammatical features, which is facilitated by her good command of English and her knowledge of grammatical terminology (partly acquired in her profession as a teacher).

(40) *"O=**te**   **nami**~nami   dua=mu=**i.**"*[8]
      2SG.SBJ=APPR   RD~sad   bad=2SG.IPFV=IRR
      "'Don't feel sad.'"
      (1-T063)

In three other narratives, it is unclear whether the action has commenced or not because the narrator does not provide enough detail. For example, in 1-T012, an old woman tells a boy not to pick a coconut (41), but he can pick it when he goes home. Later, as he is leaving, she asks if he is going to pick the coconut and tells him not to knock it down (42). It could be that the boy has made a move towards picking the coconut and (41) is intended to stop him, while in (42) he has started to knock the coconut down and is told not to. If so, the analysis of the difference between *ae* and *te* would be supported.

(41) *"Mama   o=**te**   **pu**~pus=i=a=mu=**i.**"*
      DEM1   2SG.SBJ=APPR   RD~break.off=TR=3SG.OBJ=2SG.IPFV=IRR
      "'Don't pick that (coconut).'"
      (1-T012)

(42) *"O=**te**   **va**~va-pu=i=a=mu=**i,***
      2SG.SBJ=APPR   RD~CAUS-fall=TR=3SG.OBJ=2SG.IPFV=IRR

      o=me-a   ovu   dini   mai."
      2SG.SBJ=COM-SG.OBJ   climb   down   hither
      "'Don't knock it down (lit. make it fall), climb down here with it.'"
      (1-T012)

Nevertheless, in a Bougainville Crisis narrative, it could be argued that this analysis of *ae* and *te* is supported, or not. In 1-T053, the speaker recounts how she and other women were travelling up into the bush and were stopped by soldiers who asked where they were going. The women answered that they were going to see women up in the bush, to which the soldiers responded (43). The speaker describes how they were lined up and had guns and knives pointed at their mouths and then told (44). When the women clarified that they were not looking for someone else, but were going to see some women, the soldiers uttered (45).

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8 It is unclear why PSI enclitics are used in (40)–(42). In conditional clauses and in imperatives, we find PSI enclitics when the verb is *po* 'stay, exist' but in prohibitives, PSI enclitics occur with other verbs as well. Their use is not dependent on valency nor the verb's semantic class, nor is it speaker-related. It could reflect more widespread use of PSI diachronically. Further research is required to solve this matter.

(43) *"Mu=tonu,   mu=**ae**   **nao~nao=i.**"*
      2PL.SBJ=stand   2PL.SBJ=NEG   RD~go=IRR
      "'Stand, don't go.'"
      (1-T053)

(44) *"Mu=**ae**   **nao**~nao   tae,   mu=**ae**   nao~nao=**i.**"*
      2PL.SBJ=NEG   RD~go   up   2PL.SBJ=NEG   RD~go=IRR
      "'Don't go up, don't go.'"
      (1-T053)

(45) *"Mu=**te**   **nao**~nao=**i.**"*
      2PL.SBJ=APPR   RD~go=IRR
      "'Don't go.'"
      (1-T053)

Since both *ae* and *te* are used in the same context (and the women had made no further progress with their journey), this supports the idea that there is no semantic distinction between *ae* and *te*. Alternatively, it could be that once the soldiers discovered/believed the women's intentions, they perceived their journey as already in progress and were instructing them to cease it. If so, the recently proposed analysis is supported. Otherwise, it might be that prohibitives with *ae* are used for general prohibitions, whether the action has commenced or not, whereas prohibitives with *te* are restricted to contexts where the action has begun and thus the prohibition has more urgency and/or warns of undesirable consequences. Thus in 1-T053, *ae* is used to prohibit movement that has commenced, then *te* is used to prohibit movement that has commenced, but there is more urgency and/or a warning.

Whichever analysis of the *ae* and *te* distinction is most accurate, it is more likely that there is a difference in meaning between *ae* and *te*; after all, true synonyms are very rare. Similar to Papapana, there is a distinction between immediate and delayed future forms in imperatives in a number of languages (Aikhenvald 2010: 182–83). For example, Nambiquara (sout2944, Nambikwaran; Brazil) has a "cessation" imperative which denotes 'stop immediately', whereas there is no urgency for the prohibitive 'don't' (Kroeker 2001: 30–32). The only other Oceanic language that I have encountered which has two prohibitive morphemes like Papapana is Ulithian (ulit1238, Federated States of Micronesia), which has preverbal *towee* 'future negative', glossed as NEG:IMP, and preverbal *ðe* 'mild negative imperative' (Lynch 2002d). Meanwhile in Banoni, a 'shouldn't' interpretation can be achieved with irrealis *ma* and the usual negator *to* and this contrasts with a distinct negator and verbal reduplication for prohibitives

(Lynch and Ross 2002). The difference between Papapana *ae* and *te* will be returned to in Section 6.2.2.

5 Cross-linguistic apprehensive and prohibitive similarity

This section investigates languages where an apprehensive and prohibitive morpheme are formally similar/identical, exploring the relationship between these two meanings, which is often arguably one of polysemy, that is, "multiple senses of the same phonological word" which "are judged to be related" (Saeed 2016: 60). Section 5.1 focuses on non-Austronesian languages, Section 5.2 on Austronesian languages including Oceanic languages, while Section 5.3 examines the relationship between the use of *te* in apprehension-causing and prohibitive clauses in Papapana.

5.1 Non-Austronesian languages

Pakendorf and Schalley (2007) find the use of affirmative forms to express prohibitives rare: only six languages (3.7%) in their typological sample of 163 languages use an affirmative form to express prohibition, and it is only in two of these, Sakha (yaku1245, Turkic; Russian Federation) and Lavukaleve (lavu1241, Papuan isolate; Solomon Islands), where there is cross-over between apprehensive and prohibitive forms.

In Sakha, there are two imperative paradigms, an Immediate Future Imperative and a Distant Future Imperative, with prohibitives being regularly derived from imperatives with a negative suffix (Pakendorf and Schalley 2007: 517–18). However, Sakha also has a Voluntative-Potential paradigm, expressing possibility and hope, and occasionally having "an apprehensive nuance" (Pakendorf and Schalley 2007: 518), and it is the second person affirmative Voluntative-Potential form which can also be used to convey future prohibition.

In Lavukaleve, the admonitive mood suffix *-n* has several meanings: admonitive, deleterious possibility, negative imperative, irrealis and exhortative (Terrill 2003: 335–39). The admonitive usage warns against something, "telling the hearer to avoid something bad", which sometimes contains an implied prohibition (Terrill 2003: 335). The deleterious possibility usage indicates "that something bad might happen, without any implied command" (Terrill 2003: 335) and could thus be termed *apprehensive*. The admonitive mood suffix *-n* can also be used in a

negative imperative where it tells the hearer not to do something, but there is "no implication that bad results will follow if the hearer ignores the command" (Terrill 2003: 336). Unlike Sakha, Lavukaleve does not have other negative forms which can prohibit an action (Pakendorf and Schalley 2007: 520).

Another Papuan language where an apprehensive morpheme also has a prohibitive meaning is Rotokas, with which Papapana speakers are in contact (Section 1). In Rotokas, the particle *teapi* 'lest' has an "apprehensional" function and is used "to conjoin a clause that describes an undesirable situation" (Robinson 2011: 144). *Teapi* can be used in independent apprehensive clauses, following the predicate 'to be afraid', or in an apprehension-causing clause with either an avertive function (46) or 'in case' function. However, *teapi* is also glossed as PROH and translated as 'don't' (47), 'you can't' or 'you mustn't'. There is another prohibitive construction involving *opeita* 'PROH, don't', a distinct negator, not used to negate declarative clauses (like Papapana *ae* is). Robinson (2011) does not describe the formation of prohibitives that use *teapi* and *opeita*.

Rotokas

(46) | *Avuki-vira* | *monia* | *tovo-a-vo* | *benk=ia* | ***teapi*** |
      |-------------|---------|-------------|-----------|-------------|
      | secure-ADV | money | put-1SGβ-IPβ | bank=LOC | lest |

       va   *kaviru-i-ve.*
       PPRO.3.SG.N   steal-3PLβ-SBJV[9]
       'I am putting money in the bank so that they don't steal it.'
       (Robinson 2011: 144)

(47) | ***Teapi*** | *ragai=va* | *voroko-pa-u* | *osia* | *vii=re* |
      |-------------|------------|----------------|--------|----------|
      | PROH | PPRO.1.SG=ABL | arrogant-CONT-2SGα | as | PPRO.2.SG=ALL |

       reoreo-pa-ra.
       talk-CONT-1SGα
       'Don't be arrogant with me as I'm talking to you.'
       (Robinson 2011: 164)

In Tok Pisin, to which Papapana speakers are shifting (Section 1), *nogut* denotes 'lest, don't, else, otherwise' (Baing et al. 2008: 56) and can be used for a warning (48) or a prohibition (49). Prohibition can also be expressed using *no ken* 'cannot, may not, don't' (Baing et al. 2008: 56; 188). Aikhenvald (2010: 358) describes *nogut* as polysemous. This is also arguably the case for Sakha, Lavukaleve and Rotokas, as the second person Voluntative-Potential affix, admonitive *-n* and *teapi* respectively have multiple senses, which can be judged as related (see Sections 5.3 and 6).

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9 α and β represent two verb classes (see Robinson 2011: 147–154).

Tok Pisin

(48) *Lukaut!*   ***Nogut***   *yu*   *bagarap!*
      be.careful   NEG.CONSEQUENCE   you   be.ruined
      'Watch out! You might get hurt!'
      (Aikhenvald 2010: 358)

(49) ***Nogut***   *yu*   *paitim*   *pikinini*   *bilong*   *mi.*
      NEG.CONSEQUENCE   you   fight.TR   child   of   me
      'Don't hit my child.'
      (Baing et al. 2008: 188)

Finally, in Thulung Rai (thul1246, Sino-Tibetan, Kiranti; Eastern Nepal) the lexical verb *nɯmu* 'to be auspicious/appropriate' has developed (i) into a precautioning suffix via an optative, and (ii) into an impersonal "general prohibitive" marker which denotes 'one should not' (Lahaussois 2018). This contrasts with the negative imperative, which denotes 'don't'. This is arguably a case of heterosemy, which is when historically related meanings/functions "are borne by reflexes of the common source element [but] belong in different morpho-syntactic categories" (Lichtenberk 1991: 476). In Thulung Rai the emphatic particle *sø* also has both apprehensional and prohibitive functions (Lahaussois 2018).

5.2 Austronesian and Oceanic languages

Within the Austronesian family, there are several languages where apprehensive and prohibitive morphemes are formally identical/similar. In Tukang Besi (tuka1248, Austronesian; Indonesia), the complementizer *bara* 'lest' introduces complement clauses of 'fear' or 'persuade' verbs (Donohue 1999: 393; 99–400), and introduces reason (i.e. apprehension-causing) adverbial clauses where it denotes 'lest, so that it not happen' (Donohue 1999: 409). However, *bara* also denotes 'don't' in independent prohibitive clauses (Donohue 1999: 454). There is another prohibitive form *ka'ulu* 'don't' which, unlike Papapana *ae*, differs from negators used in other clauses (Donohue 1999: 453, 48–49).

In Maori (maor1246, Austronesian; New Zealand), the monitory mood particle *kei* is used for positive warnings with second or third person subjects in independent clauses (Bauer 1993: 464–65) or introduces complement clauses of fear (Bauer 1993: 40). However, a negative imperative can be expressed by *kei*, though Bauer (1993: 37) is hesitant about whether *kei* is the same morpheme as monitory *kei*, admitting that she was unable to find examples that native speakers found

ambiguous. Other negative imperatives involve the dedicated negator *kaua ~ kauaka ~ aua* (Bauer 1993: 35).

Within the Oceanic subgroup, there is similarity between apprehensive and prohibitive constructions in Lolovoli (east2443) and Vatlongos (sout2859), both spoken in Vanuatu, and Äiwoo (ayiw1239), spoken in the Solomon Islands. In the Lolovoli dialect of North-East Ambae, the preverbal apprehensive mood particle *bo* is only used with second person subjects and expresses an order not to do something but "includes a definite warning component that there will be certain negative consequences if the action described by the verb takes place" (Hyslop 2001: 251). The addressee may be warned against an involuntary action, such as falling, or warned against a negative unintentional result of a voluntary action, such as cutting oneself accidentally while intentionally cutting something else (50). In (50) *bo* has an apprehensional-epistemic function but it can also have a precautioning function (51), where the main clause prohibitive is marked by the preverbal dehortative particle *mese,* which "always expresses a command not to perform a volitional action" but carries no implication of negative consequences (Hyslop 2001: 248, 252).

Lolovoli, North-East Ambae

(50) *Go=**bo**   tai=go.*
      2SG.SBJ=APPR   chop=2SG.OBJ
      'Watch out you don't cut yourself.'
      (Hyslop 2001: 251)

(51) *Go=**mese**   gani=e,   go=**bo**   lue.*
      2SG.SBJ=DEHOR   eat=3SG.OBJ 2SG.SBJ=APPR vomit
      'Don't eat it, you might vomit.'
      (Hyslop 2001: 253)

Example (50) is not a prohibitive: the speaker is not trying to make the addressee "not realize some state of affairs" (Devos and Van Olmen 2013: 22) because the speaker does not think the addressee would volitionally realize the situation. This is also the case for the Hoava and Kubokota examples (14)–(15) in Section 3.1.

For (52), Hyslop (2001: 253) analyses the first clause, with *bo,* as a warning about the consequences of dealing with black magic, whereas the second clause with *mese* is an instruction not to use black magic. However, I would argue that both clauses are prohibitives, since the addressee does have control over whether they use black magic, but with *bo* there is an implication about the negative consequences, whereas with *mese* there is not. It could be the case that in Lolovoli, the prohibitive use of *bo* is emerging, perhaps due to the influence of *mese* in the main clause of precautioning sentences such as (51), or due to a change in

volition/control (see Section 6.1). Perhaps a similar pathway of development may occur in future for Hoava *maki* and Kubokota *keta* (and has occurred in Papapana; see Sections 6.2.2 and 6.2.3).

(52)   *Mo=vo,*   *"Ne=**bo***   *hako*   *na*   *mate-ana.*
       3SG.SBJ=say   2NSG.SBJ=APPR   hold   ACC   die-NMLZ

       *Ne=**mese***   *hako*   *na*   *mate-ana."*
       2NSG.SBJ=DEHOR   hold   ACC   die-NMLZ
       'He said, "Be careful not to handle black magic. Don't handle black magic."'
       (Hyslop 2001: 253)

In Vatlongos, the apprehensive mood and prohibitive prefix paradigms overlap. The apprehensive prefix is used for events that are "possible and unwanted", and often "to give a warning to take preventative action" (Ridge 2019: 179) as in (53) where the speaker wants the addressee to avoid the bulls. Apprehensive *na-* co-occurs with the distant future subject co-referencing prefixes (except in third person singular where it occurs only as *na-*) (Ridge 2019: 210–211). The resulting apprehensive paradigm overlaps with the prohibitive paradigm (Ridge 2019: 211). The prohibitive prefixes, however, must co-occur with the negative clitic *ti* to give a prohibitive meaning (Ridge 2019: 209) as in (54). Ridge highlights that the combination of morphemes to mark prohibitive mood is an example of distributed exponence (Ridge 2019: 390), that is, "morphosyntactic and morphosemantic properties are marked non-redundantly at multiple inflectional sites" (Carroll 2016: 286). Therefore, in Vatlongos there is no polysemy because the apprehensive and prohibitive constructions are different, even though they both employ the same prefixes. Nevertheless, the apprehensive and prohibitive prefixes are arguably diachronically related.

Vatlongos

(53)   *Wael*   *buluk*   *xi-e*   *mei*   ***na**-has-uk!*
       wild   bull   SG-PROX   come   3SG.APPR-kill-2SG
       'The wild bull might come kill you!'
       (Ridge 2019: 179)

(54)   ***On**-tangal=**ti**!*
       2SG.PROH-make.noise=NEG
       'Don't make noise!'
       (Ridge 2019: 179)

In Äiwoo, the apprehensive mood particle *de* 'lest, in case' appears in independent apprehensive clauses (55) and in apprehension-causing clauses, but it also combines with *=eo ~ =io* to denote 'don't' in prohibitive clauses (56) (Næss 2017: 29, 37; Næss, pers.comm. 20/06/2019). The other way to express prohibition is with the interjection *kaa* 'don't' (Næss 2017: 48; pers.comm. 20/06/2019). Næss (pers.comm. 20/06/2019) analyses *=eo ~ =io* as the prohibitive marker, and this requires the verb to be marked for apprehensive mood with *de*. An alternative analysis might suggest that the obligatory combination of *de* and *=eo ~ =io* is an example of distributed exponence. There is again no polysemy because the apprehensive and prohibitive constructions are not identical, but there is similarity between them because they both employ *de*.

(55)   *Kâ-no=ngä   nyenaa   **de**-eobu-mä   dä.*
        say-1MIN=CV   tree   APPR-fall-DIR:1   some
        'I thought a tree might fall down on me [during the cyclone].'
        (Næss, pers.comm. 20/06/2019)

(56)   ***De**-wâ-tepeu-nâ-mu=**io**   iu!*
        APPR-CAUS-be.stupid-UV-2MIN=PROH   1MIN
        'Don't make fun of me!'
        (Næss, pers.comm. 20/06/2019)

5.3 Papapana

In Papapana apprehensive *te* co-occurs with irrealis *=i* in apprehension-causing adverbial clauses (Section 3.2), while prohibitives are formed with monosyllabic or disyllabic verbal reduplication and either preverbal negative *ae* or preverbal apprehensive *te* (Section 4.2). Sometimes irrealis *=i* may also be present in prohibitives and thus the main difference morphologically between the two constructions is the presence of verbal reduplication in prohibitives.

The morpheme *te* in both constructions is formally identical and occurs in the same syntactic position in the VC. The senses of *te* in both constructions are also similar: *te* marks the event as undesirable and to be avoided. In precautioning sentences, the main clause expresses a precaution that can avert the undesirable event or the undesirable consequence of an event expressed in the apprehension-causing adverbial clause. In prohibitive clauses, the speaker directs the addressee to avoid or cease an action that the speaker deems undesirable. However, it cannot be said that *te* is polysemous, with two senses that are related, because the apprehensive and prohibitive constructions are not identical and they do not rely

solely on *te* for their meaning. Instead, the exponence of these feature values is distributed between *te* and other morphemes. One might instead consider whether *te* has one unified meaning, perhaps 'undesirable', and the difference in interpretation between apprehensive and prohibitive is contributed by the morphology in which the constructions differ. In this case, the apprehensive construction would be compositional, with irrealis *=i* contributing the possibility component (as it does elsewhere) and *te* contributing the undesirability component. However, the prohibitive construction is not as convincingly compositional because verbal reduplication does not have a unified meaning like irrealis *=i*, and unlike irrealis *=i*, verbal reduplication always has to combine with another morpheme, whether in prohibitive, reciprocal or imperfective aspect constructions. Therefore, I argue in Section 6 that diachronically, the apprehensive and prohibitive meanings are related and that one construction with *te* developed from the other.

6 Development of apprehensive/prohibitive similarity

This section considers how similarity between apprehensive and prohibitive morphemes might have developed and in which direction. Section 6.1 starts with Pakendorf and Schalley (2007) who propose that meanings of prohibition develop from meanings of possibility and apprehension. Section 6.2 investigates whether the Papapana data support this proposed pathway, and the motivations and mechanisms for this semantic change.

6.1 Possibility to prohibition via apprehensives and admonitives/preventives

Pakendorf and Schalley (2007: 525) propose that in a small number of the world's languages, the prohibitive has developed from "an affirmative form with an original meaning of possibility" and/or desire, via intermediate stages of apprehension and warning:

(57)   possibility   →   apprehension   →   warning   →   prohibition

Pakendorf and Schalley (2007: 525) assume that the affirmative meaning is primary because in the languages discussed, (i) the affirmative is not restricted to specific person reference, but the prohibitive is restricted to second person, and (ii) most

forms "can either be negated regularly (Sakha, Belhariya, and Navajo) or cannot co-occur at all with regular negative markers (Chepang and Lavukaleve)".

Pakendorf and Schalley (2007: 533–35) also discuss languages for which development from possibility to prohibition is incomplete. In Kannada (nucl1305, Dravidian; India) and three Australian languages, Murrinh-Patha (murr1258, Daly), Wambaya (wamb1258, West Barkly), and Nyangumarta (nyan1301, Pama-Nyungan), only the first half of the pathway (possibility → apprehension → warning) is represented, while Maori *kei* highlights the second half (apprehension/warning → prohibition).

Pakendorf and Schalley (2007: 528) propose that development from possibility to prohibition involves a conventionalization of conversational implicatures, a process argued to be involved in grammaticalisation (see, e.g. Bybee et al. 1994: 196–197; Heine et al. 1991: 71–72; Traugott 1989). This process involves a particular form having certain inferences in certain contexts, which can be exploited/invited by the speaker. These inferences can become semanticised, that is, part of the encoded meaning, via a stage of conventionalization of the inference, during which both the original and new meaning are possible. For the development of prohibition from possibility, Pakendorf and Schalley (2007: 528) thus propose:

> The fact of voicing one's apprehension, i.e., fear of bad consequences, to an addressee often contains a warning to that addressee to do whatever needs to be done to avoid the consequences of his/her action… In turn, a warning can be viewed as an incipient prohibition, since the most certain way of ensuring that the addressee avoids an action that might be followed by bad consequences is to prohibit it altogether. (Pakendorf and Schalley 2007: 528)

The intermediate meaning of apprehension encodes undesirability and possible negative consequences, and "this negative meaning carries over to the prohibitive meaning even without formal negative marking" (Pakendorf and Schalley 2007: 528–529). What Pakendorf and Schalley do not explain is how or why a meaning of neutral possibility extends to undesirable possibility. Pakendorf and Schalley 2007: 530) suggest their proposed pathway runs counter to the "proposed unidirectionality of development of epistemic modality out of deontic modality" (see, e.g., Bybee et al. 1994: 195; Heine et al. 1991: 175–178; Traugott 1989).

Pakendorf and Schalley (2007) do not mention, however, that Bybee et al. (1994: 211) also acknowledge an "unexpected set of examples" from Alyawarra (alya1239, Pama-Nyungan; Australia) and Slave (slav1253, Athabaskan; Canada), which demonstrate a shift in the opposite direction, from epistemic or root possibility to admonitive mood (a speaker-oriented modality) when the sense of possibility contains "the notion that the possible situation is unpleasant, dangerous, or deleterious". Like Pakendorf and Schalley (2007), Bybee et al. (1994: 211–212) also discuss Chepang (chep1245, Sino-Tibetan; Nepal) where the possibility marker

does not carry the deleterious implication but can be used to issue a warning in the second person. They cite Caughley (1982: 102) who explains that originally the addressee was warned about something in which they were not intentionally involved, but then this warning was extended to cases where the addressee could have control, and was thus interpreted as a prohibition.

This difference in volition and control is key to distinguishing semantically between 'prohibitive' and 'preventive' negative imperatives in Slavic languages (formally, these are differentiated by aspect and the verb's semantic class). In prohibitive constructions, the speaker demands that the addressee stops or refrains from an activity which brings about an unwanted situation and "believes that the addressee is willing and able to comply" (Kuehnast 2008: 178). In preventive constructions, the speaker warns the addressee of "undesirable consequences which are predictable from his/her current activities" (Kuehnast 2008: 189) and the speaker believes that the addressee is unaware of the undesirable consequence of his/her activities and cannot control and/or does not intend it (Kuehnast 2008: 178, 192). The imperative force is directed to an activity or state which the addressee can actually control, but their current activities are not mentioned (Kuehnast 2008: 192). It could be argued that Kubokota and Hoava examples (14)–(15) (Section 3.1) and Lolovoli example (50) (Section 5.2) are preventives since the addressee is warned against an involuntary action which will have a negative effect on them, or a negative unintentional result of a voluntary action.

Dobrushina (2006: 62)[10] also notes that in many dialects of the Yakut language (Sakha), there is a parameter of indirect mood which combines probabilistic, apprehensive, preventive and prohibitive uses and she also suggests that the prohibitive developed from the apprehensive. However, Dobrushina proposes that the semantic link on the pathway from apprehensives to prohibitives is a preventive (58). It is not clear at what stage a probabilistic value arises but it is assumed that it develops from the apprehensive (58). Dobrushina (2006: 63) also suggests this pathway for Lavukaleve though with probability preceding apprehensive.

(58)   apprehensive   →   preventive   →   prohibitive
                              →   probability

Similar to Pakendorf and Schalley (2007: 528), Dobrushina (2006: 62) suggests that this development arises because a statement about the occurrence of a possible, undesirable, future action is reinterpreted as an instruction to avoid this situation

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10 I thank an anonymous reviewer of my 13th Association for Linguistic Typology conference abstract for providing a translation of excerpts from this paper.

by some other action. If Lolovoli example (50) is seen as preventive, then this supports Dobrushina's pathway as a prohibitive use of *bo* appears to be emerging when the addressee does have control over the action (52).

6.2 Apprehensive to/from prohibitive in Papapana

We now turn to the relationship between *te* in apprehensive and prohibitive clauses in Papapana: did a prohibitive morpheme gain an apprehensive meaning or did an apprehensive morpheme gain a prohibitive meaning, and why and how did this happen?

6.2.1 Prohibitive to apprehensive

One hypothesis is that *te* was originally a prohibitive morpheme (which combined with verbal reduplication and optionally irrealis =*i*) and it developed into an apprehensive morpheme (which combined only and obligatorily with irrealis =*i*).

Since prohibitives in Papapana can also be formed with negative *ae*, verbal reduplication and optionally irrealis =*i*, then this hypothesis assumes either (a) that both *te* and *ae* were originally used in prohibitive constructions or (b) that *ae* at some stage began to negate imperatives as well as declaratives, thus creating a contrast with the existing prohibitive construction involving *te*. Scenario (a) seems unlikely as it is unusual for Oceanic languages to have two prohibitive morphemes. Scenario (b) is plausible as Oceanic languages often have distinct negative markers for declaratives and imperatives (Section 4.1). However, we then have to explain why *ae* began to negate imperatives as well as declaratives. It is certainly possible that negative *ae* could have extended its scope, or perhaps as Papapana has become more endangered, speakers are forgetting and/or replacing *te* with the declarative negator. However, *te* is apparently used when prohibiting a commenced action/state whereas *ae* prohibits something not yet commenced (Section 4.3), so if scenario (b) is correct, there would not previously have been a way to express general prohibition of actions (commenced or not) and this seems unlikely. Alternatively, *te* lost this function and specialized as a cessative prohibitive but then we have to explain why this happened and why it specialized in this way. Even if we follow my hypothesis in Section 4.3 – that *ae* is used for general prohibition of actions (commenced or not), and *te* is restricted to commenced actions and/or has overtones of warning/urgency – then we would still have to explain why *te* became more specialized.

In addition, this hypothesis assumes that Papapana did not have an apprehensive mood category, or that it perhaps lost it at an earlier stage before

developing a new one. While both of these scenarios are possible, it is arguably more likely that Papapana did have an apprehensive mood category to begin with, since Oceanic languages often have apprehensives (Section 3.1).

6.2.2 Apprehensive to prohibitive

The other hypothesis is that *te* was originally an apprehensive morpheme (which combined only and obligatorily with irrealis =*i*) and that it developed into a prohibitive morpheme (which combined with verbal reduplication and optionally irrealis =*i*). The addition of verbal reduplication is arguably by analogy with the (assumed to be) already existing prohibitive construction involving negative *ae*.

   It is likely that *te* was originally apprehensive as Oceanic languages often have apprehensive morphemes (Section 3.1). It is also likely that there was one prohibitive morpheme as it is unusual for Oceanic languages to have two prohibitive morphemes (Section 4.3). Although less likely, it is possible that *ae* is the original negator in prohibitives because some Oceanic languages do use the same negator in both declaratives and imperatives (Section 4.1). Certainly *ae* is a widespread negator in Papapana (Section 2.3) whereas *te* is not. That *ae* is the original negator in prohibitives is more strongly supported by the fact that use of *ae* in a prohibitive clause is two times more frequent than the use of *te* in my text corpus.

   This hypothesis presupposes that there were originally two constructions which each had their own functions, which is economical, and that an additional prohibitive construction with *te* was created. However, we then need to explain why an additional prohibitive construction was created. Although it is unusual in Oceanic languages to have two prohibitive constructions, cross-linguistically this is not necessarily the case: for example, in a sample of 100 Bantu languages, Devos and Van Olmen (2013: 44) find there is "more variation in the forms used for the directive with negative directionality" than those with positive directionality. One of the factors they propose to explain this variation is that negative directives have "a number of functional subtypes, such as the cessative and the warning… Speakers may feel the need to make such distinctions explicit… and the forms that they use may develop into new general prohibitival strategies" (Devos and Van Olmen 2013: 45). This could be why a prohibitive with *te* developed in Papapana. Recalling the distinctions between *ae* and *te* made in Section 4.3, we could argue that speakers wanted to make explicit the cessative or warning function of the negative directive by using *te*. This is similar to Lolovoli for which I argued that a prohibitive use of apprehensive *bo* is emerging that contrasts with *mese* prohibitives, which lack a warning/implication of undesirable consequences (Section 5.2). Another motivation could be politeness: prohibiting someone from doing something they have already commenced constitutes an unfavourable evaluation

of the addressee's current behaviour and this is more face-threatening than evaluating their expected behaviour, or than a general, impersonal prohibition. Speakers therefore develop a new (perhaps initially more indirect) strategy, a prohibitive with *te*, to perform this more face-threatening speech act.

Finally, this hypothesis is also likely from a syntactic point of view: apprehension-causing clauses with *te* can have second or third person subjects, while prohibitive clauses with *te* only have second person subjects. Therefore, in apprehensive constructions, *te* is less restricted to specific person reference, but is then restricted to second person once it has been extended to prohibitive constructions.

6.2.3 The pathway of change and insubordination

If we accept that *te* was originally an apprehensive morpheme that developed into a prohibitive morpheme, we need to explain not only why this happened, but how. The answer is arguably that the apprehension-causing subordinate clause has developed into a prohibitive main clause via insubordination. Insubordination is "the conventionalized main clause use of what… appear to be formally subordinate clauses", with the subordinate clauses either being finite or non-finite (Evans 2007: 367). Sometimes such clauses are treated "as underlying subordinate clauses from which some sort of main clause has been ellipsed" (Evans 2007: 367). Indeed, this is the approach taken by Austin (1981) for Diyari and an argument I proposed for Papapana for those few examples from April 2018 (Section 3.3.1). However, Evans takes the insubordination approach when analysing Diyari, which has a special subordinate verb form, the 'lest' or apprehensive form. For Evans, (59) is an example of a 'typical' subordinate use, while (60) is an example of an 'insubordinated' independent use, rather than being subordinate to an implicit main clause (Austin 1981: 229).

Diyari

(59) *Makita   padaka-0-mayi,   wanku   yundu   wala   nayi-**yaṯi.***
      gun-ABS   take-IMP-EMPH   snake-ABS 2SG.A   soon   see-lest
      'Carry a gun in case you see a snake.'
      (Austin 1981: 225)

(60) *Kulu-ka   kintaya-li   yinana   mata-**yaṯi.***
      3SG.NF.A-TOKEN   dog-ERG   2SG.OBJ   bite-lest
      'This dog might bite you.'
      (Austin 1981: 229)

Insubordinated clauses can have a range of functions, including commands and warnings (Evans 2007: 368). Evans (2007: 368, 370–372) proposes that diachronically, these functions arise through a four-step process: (i) subordinate construction; (ii) ellipsis of the main clause (which is reconstructed by the addressee); (iii) conventionalized restriction of interpretation of the ellipsed material; and (iv) conventionalized main clause use, whereby it may not be possible to restore any ellipsed material and the construction now has its own specific meaning. Such a pathway involves "an opening up, then a closing, of the role of pragmatics" and therefore insubordination goes against much of the existing research on morphosyntactic change which asserts a unidirectional pathway from pragmatics to syntax to morphology and focuses on subordinate constructions developing from main clause material (Evans 2007: 374–375).

In Papapana, apprehension-causing adverbial clauses are finite because they have subject-indexing proclitics, but they are analysed as subordinate because there is no strong evidence that the combination of apprehensive *te* and irrealis *=i* can function in an independent apprehensive clause (Section 3.3). In Section 3.3.1, I presented a few examples where a clause containing the apprehensive *te* and irrealis *=i* (with a non-reduplicated verb) does occur independently. However, these examples come from only one speaker in elicitation sessions in April 2018 and I argued that the speaker had an implicit precaution clause in mind, or was biased by the discussion or Tok Pisin *nogut*. There are certainly no examples in the text data of an independent apprehensive clause. Therefore, I do not think the examples in Section 3.3.1 are 'insubordinated' independent clauses. However, these examples could represent the intermediate steps (ii) and/or (iii) of the insubordination process. Perhaps the utterances in April 2018 occurred because the change is recent or incomplete.

The pathway of development from apprehensive *te* to prohibitive *te* via insubordination would therefore tentatively be as follows:

Stage 1: There is one type of prohibitive clause (with negative *ae*). In precautioning sentences, there is no restriction on the clause type nor subject of the main precaution clause. The precaution clause and the apprehension-causing subordinate clause may or may not be joined by a subordinator.

Declarative main precaution clause	
OR	
Imperative/Hortative main precaution clause 'do'	V (=*i*)
OR	
Prohibitive main precaution clause 'don't'	*ae* RD~V (=*i*)
+	
(Subordinator)	
+	
Apprehension-causing subordinate clause 'let not/might'	*te* V =*i*

Stage 2: The main precaution clause is ellipsed and reconstructed by the addressee. The optional/occasional use of a subordinator in Stage 1 may have aided this ellipsis.

(Ellipsed main precaution clause, reconstructed by addressee)	
Apprehension-causing subordinate clause 'let not/might'	*te* V =*i*

Stage 3:

The statement about a possible, undesirable situation may implicate a warning about a situation over which the addressee has no control or volition, such as the army lying in (19). However, the warning becomes restricted to situations that the addressee can prevent by some other action. This is supported by the fact that (19) is the only example in the text data where the apprehension-causing clause unequivocally has an 'in case' interpretation. Since the addressee is warned about something they can prevent, the interpretation of the ellipsed precaution clause becomes restricted to imperatives/hortatives/prohibitives and to first/second person. This is supported by there being only one example in the corpus of a declarative main clause with a third person subject (21). The apprehension-causing clause is thus associated with and consequently implicates a command, and puts the face-threatening act 'off record'. Similar to my hypothesis for Lolovoli *bo* (Section 5.2), the implicated command in Papapana becomes more associated with negative polarity and gains prohibitive overtones. In Papapana this is perhaps due to precautioning sentences usually having an 'avertive' function, thus *te* denotes 'X so that *not* Y' or 'if *not* X, then Y'. Stage 3 thus corresponds to Pakendorf and Schalley's (2007) intermediate warning stage, and Dobrushina's (2006) intermediate preventive stage, with the warning/preventive then viewed as an incipient prohibition (Section 6.1).

(Ellipsed imperative/hortative/prohibitive main precaution clause, reconstructed by addressee)		
Apprehension-causing subordinate clause 'let not/might/don't'	*te*	V =*i*

Stage 4: The addressee gains control/volition over the possible, undesirable situation expressed by the clause (rather than control/volition over the ellipsed precaution). The inference is conventionalized and the prohibitive implicature becomes semanticised, as Pakendorf and Schalley's (2007) also suggest (Section 6.1). It is no longer possible to restore any ellipsed material.

Conventionalized main clause use 'don't'	*te*	V =*i*

Stage 5: This stage moves beyond Evans' (2007) process. At this stage, the verb is reduplicated and irrealis =*i* becomes optional, by analogy with the existing prohibitive construction.

Prohibitive clause 'don't X'	*ae* RD~V (=*i*)
Prohibitive clause 'don't X'	*te* RD~V (=*i*)

One final point is that this pathway of development from apprehensive *te* to prohibitive *te* could have been influenced by contact with Rotokas and/or Tok Pisin where *teapi* and *nogut* respectively have both apprehensive and prohibitive meanings (Section 5.1). This could be a case of calquing, whereby the meaning range of *te* in Papapana has been extended because speakers have copied the patterns of meaning of *teapi* and *nogut*, and/or it could even be that *te* derives from *teapi*. This hypothesis, however, requires further investigation of the syntactic statuses and historical development of these morphemes.

7 Conclusion

This paper contributes to the growing body of research on the under-studied precautioning sentence and to the debate about the syntactic status of apprehensives, by analysing the morphosyntax of precautioning sentences in the lesser-known language Papapana (Section 3.2) and arguing that Papapana apprehension-causing clauses are subordinate (Section 3.3). This paper builds on Pakendorf and Schalley's (2007) research by not only showing that there is formal similarity between apprehensives and prohibitives in Papapana, but in other languages too, including Papuan, Austronesian and a Sino-Tibetan language (Sections 5.1 and 5.2). Like Papapana (see Sections 4.2 and 4.3), in many of these languages, there is another prohibitive construction, unrelated to apprehensives. While in some of the languages, the apprehensive and prohibitive morphemes are arguably polysemous, the same cannot be said for Papapana, and instead I propose that *te* in apprehension-causing clauses and *te* in prohibitives are simply diachronically related (Section 5.3). I argued that the Papapana data supports the second half of Pakendorf and Schalley's (2007) grammaticalization path from apprehension to prohibition (Section 6.2.2) and that the additional prohibitive clause with *te* was created via a process insubordination and analogical extension

with warning and/or prevention being a critical semantic link (Section 6.2.3). It could be suggested that this pathway is not as rare as Pakendorf and Schalley (2007) thought. However, I do not agree with their claim that their data contradict "the general tendency observed by others that the development of modal meanings proceeds from deontic modality to epistemic modality" (Pakendorf and Schalley 2007: 537), because prohibitives are arguably not deontic. Following Timberlake (2007) and Nuyts, Byloo, and Diepeveen (2010), I consider prohibitives to be directive. For Timberlake, *directive* is a type of modality where the speaker, as authority, asks the addressee to act as a proxy authority and change the world from its inertial path whereas with deontic modality "a general authority asks a proxy authority to act" (Timberlake 2007: 329). Nuyts, Byloo, and Diepeveen (2010: 16) argue that deontic modality should be defined in terms of (degrees of) moral acceptability or necessity rather than permission and obligation. This is distinct from directives, which they consider in speech act terms, as attempts "by the speaker to get the hearer to do something" (Searle 1976: 11). Indeed elsewhere, imperative and prohibitive are also considered as pertaining to illocutionary type rather than modality (see van der Auwera and Plungian 1998: 83). Furthermore, even if I did agree with Pakendorf and Schalley's unjustified assumption that prohibitives/negative imperatives are "clearly deontic in their meanings" (Pakendorf and Schalley 2007: 537), the Papapana data would not contradict the pathway of deontic to epistemic modality because (i) there is no evidence that Papapana supports the first half of Pakendorf and Schalley's (2007) grammaticalization path which starts with possibility, and (ii) apprehensives are a mixed modality which are both epistemic and attitudinal (Lichtenberk 1995: 291). In fact it is this attitudinal component which could aid the development from apprehensive to prohibitive, since according to Timberlake (2007: 330), directive and attitudinal modality overlap.

An area for further research is the diachronic source of apprehensive *te*. Beyond Papapana, it would also be interesting to investigate the prohibitive use of *teapi* in Rotokas to see if there is evidence of calquing or lexical borrowing, and in which direction. It would also be interesting to observe whether the modal negative *maki* in Hoava and the adverb *keta* 'lest' in Kubokota develop into prohibitive morphemes. While it is clear that formal similarity between apprehensives and prohibitives is quite widespread in the Pacific region, it would be worth exploring whether there are more languages beyond the Pacific region where a relationship between apprehensives and prohibitives exists. This would help us to more firmly establish the pathway from apprehension to prohibition.

Abbreviations

1	First person
2	Second person
3	Third person
A	Transitive subject
ABL	Ablative
ABS	Absolutive
ACC	Accusative
ADV	Adverbial
ALL	Allative
APPL	Applicative
APPR	Apprehensive
ATTRIB	Attributive
CAUS	Causative
CLI	Noun class I
CLII	Noun class II
COM	Comitative
COMPL	Completive
COND	Conditional
CONT	Continuous
CV	Circumstantial voice
DEHOR	Dehortative
DEM1	Demonstrative 1
DEM2	Demonstrative 2
DETR	Detransitive
DIR	Directional
EMPH	Emphatic
ERG	Ergative
EXCL	Exclusive
HORT	Hortative
IMP	Imperative
INCL	Inclusive
INTS	Intensifier
IP	Immediate past
IPFV	Imperfective
IRR	Irrealis
LOC	Locative
MIN	Minimal number
N	Neuter
NEG	Negative
NEG:WARN	Negative warning
NEG.CONSEQUENCE	Negative consequence
NF	Non-feminine gender
NMLZ	Nominaliser
NSG	Non-singular

NSPEC	Nonspecific
OBJ	Object
OBL	Oblique
OPT	Optative
PART	Partitive
PASS	Passive
PERS	Personal noun class
PL	Plural
PPRO	Personal pronoun
PRO	Pronoun
PROH	Prohibitive
PROX	Proximal
PSSR	Possessor
PST	Past
R/R	Reciprocal/reflexive
RD	Reduplicant
RECP	Reciprocal
REP	Repetitive
REST	Restrictive particle
SBJ	Subject
SBJV	Subjunctive
SEQ	Sequential
SG	Singular
SPEC	Specific
SUBR	Subordinator
TOKEN	Token
TR	Transitive
UV	Undergoer voice

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